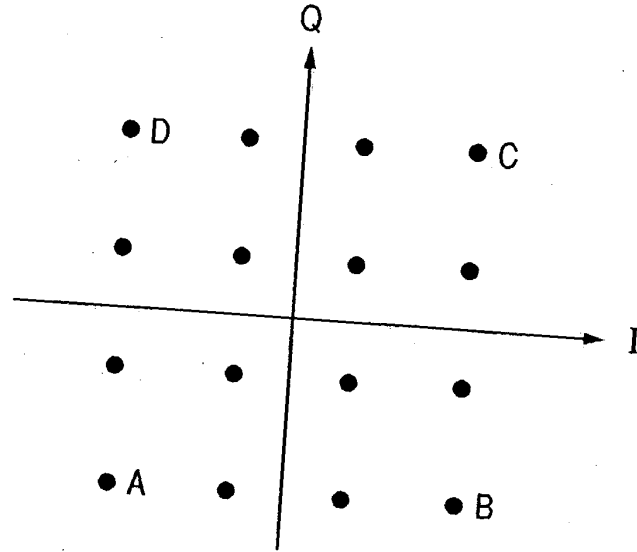


FIG. 1



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FIG. 3

16-APSK

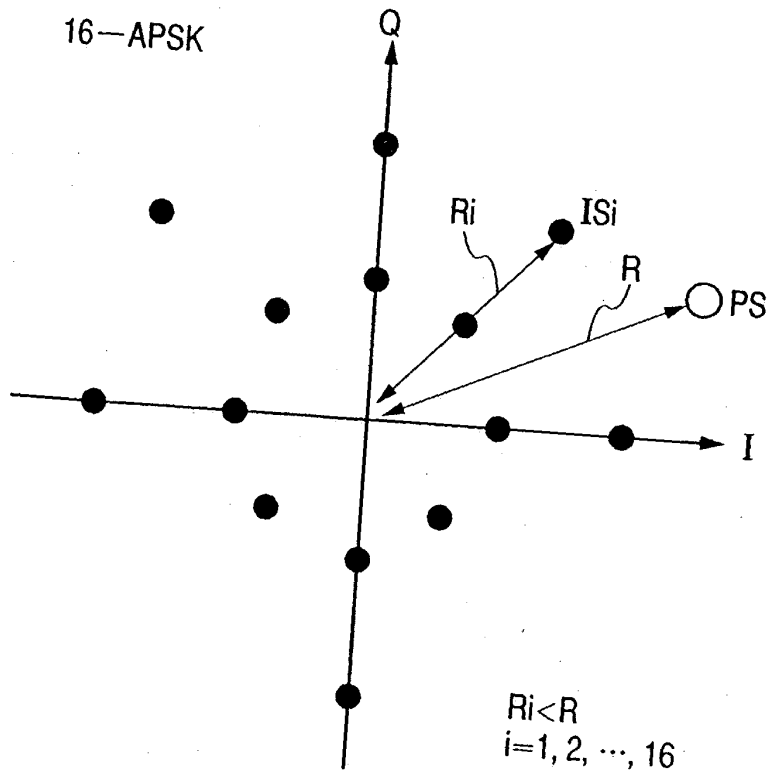


FIG. 2

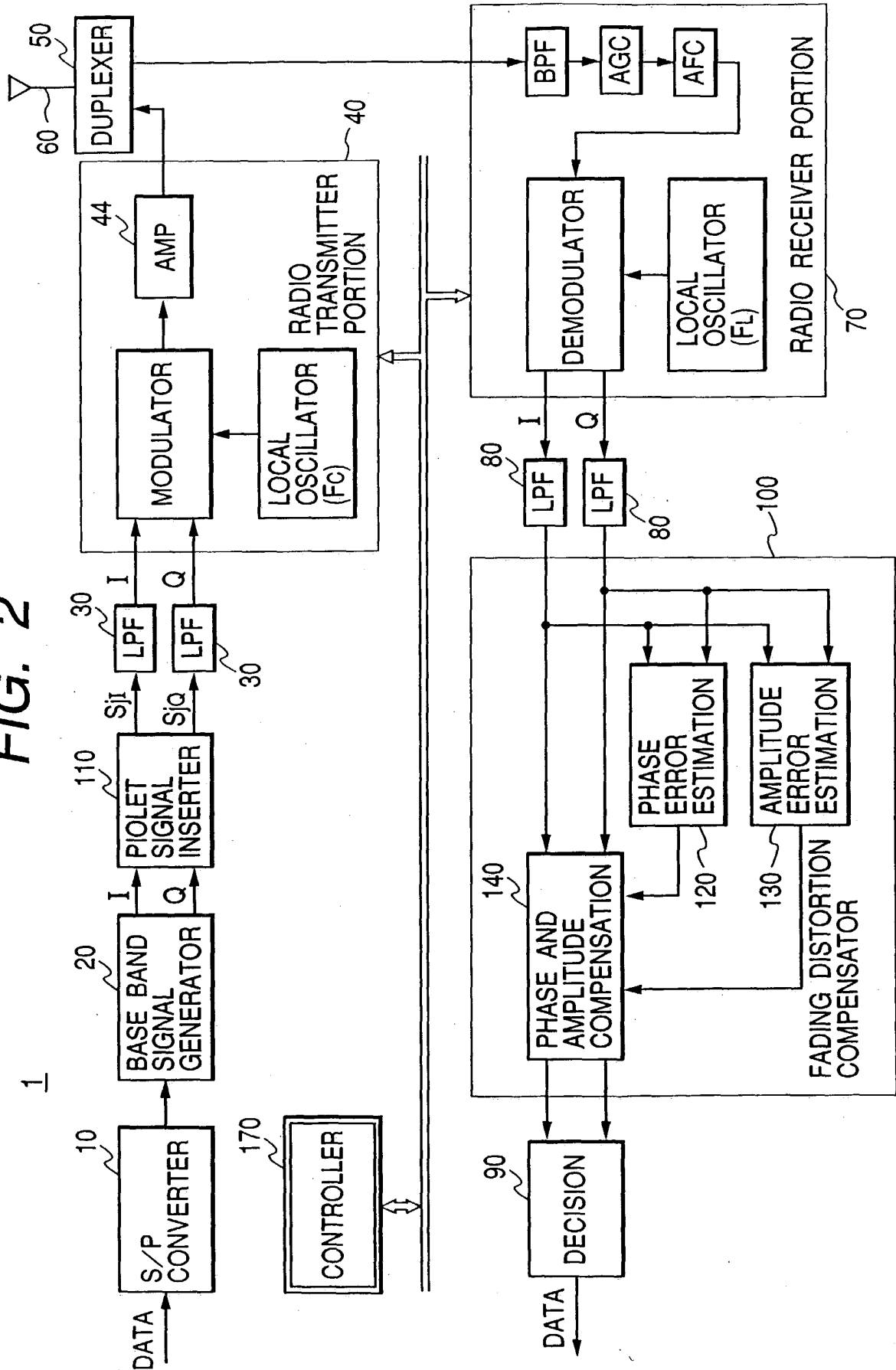
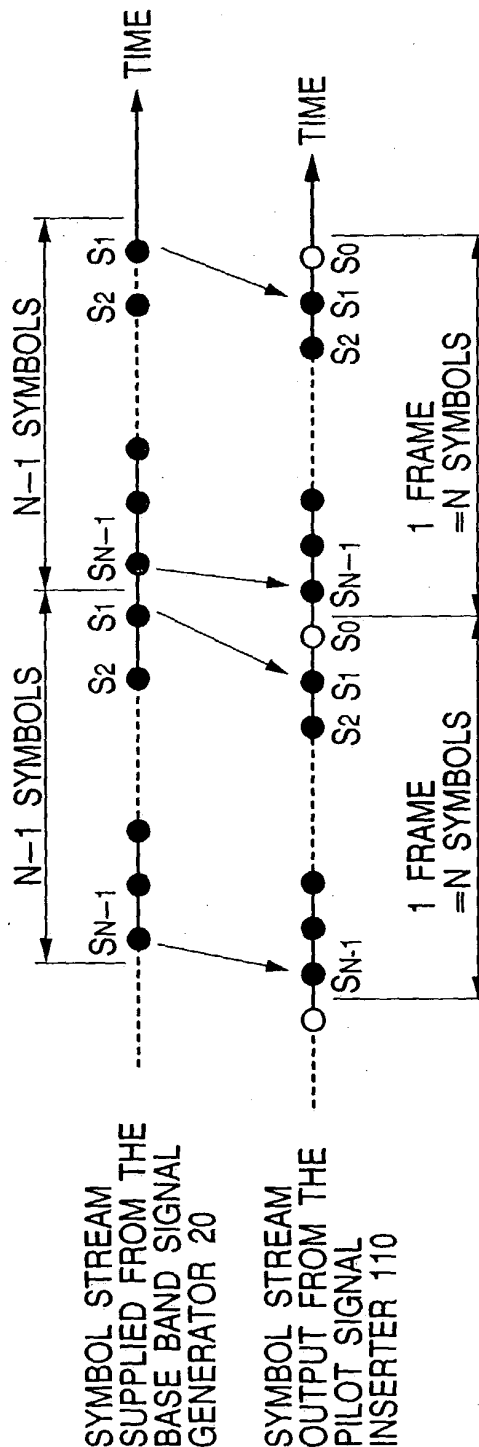


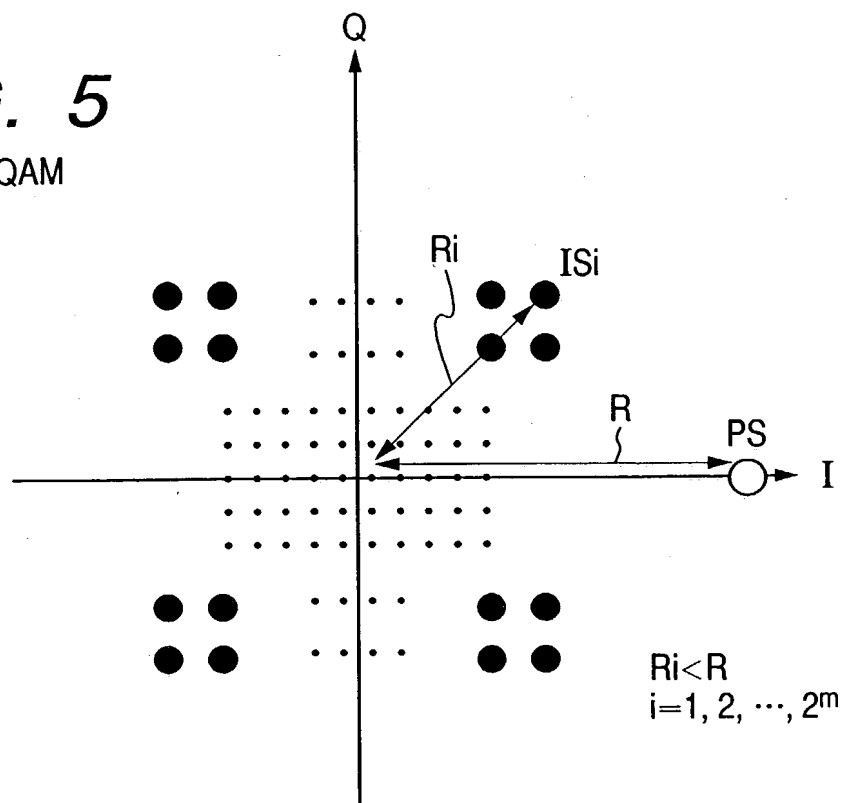
FIG. 4

OPERATION OF THE PILOT SIGNAL INSERTER 110

- : INFORMATION SYMBOL (IS_i) $i=1, 2, \dots, P$
- P: THE NUMBER OF POSSIBLE STATES
- O: PILET (OR FRAME) SYMBOL (PS)



$$S_j = \begin{cases} \text{PS FOR } j=0 \\ IS_i \text{ FOR } j=1, 2, \dots, N-1 \end{cases}$$

FIG. 5 2^m —QAM**FIG. 6**

16—QAM

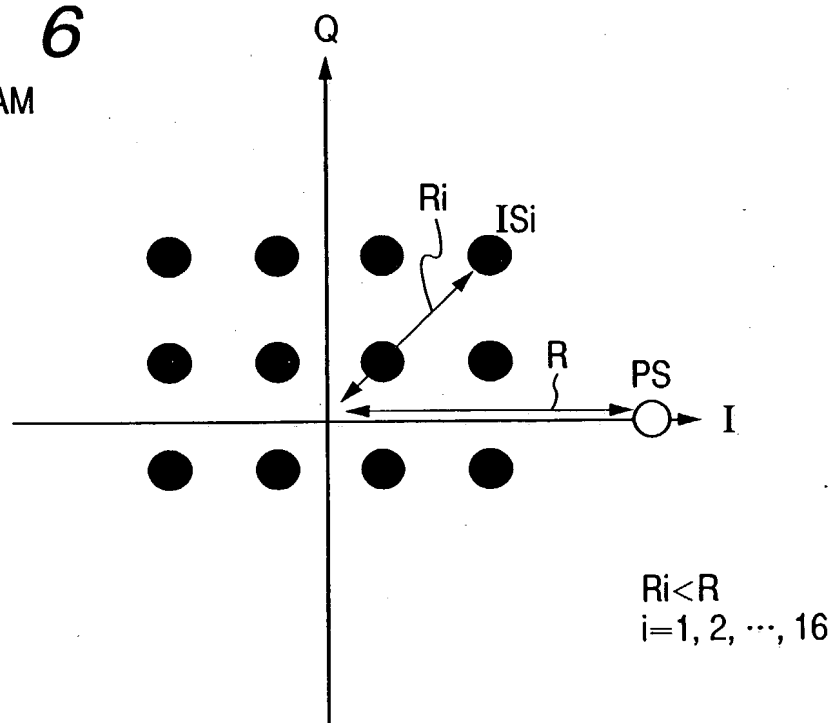
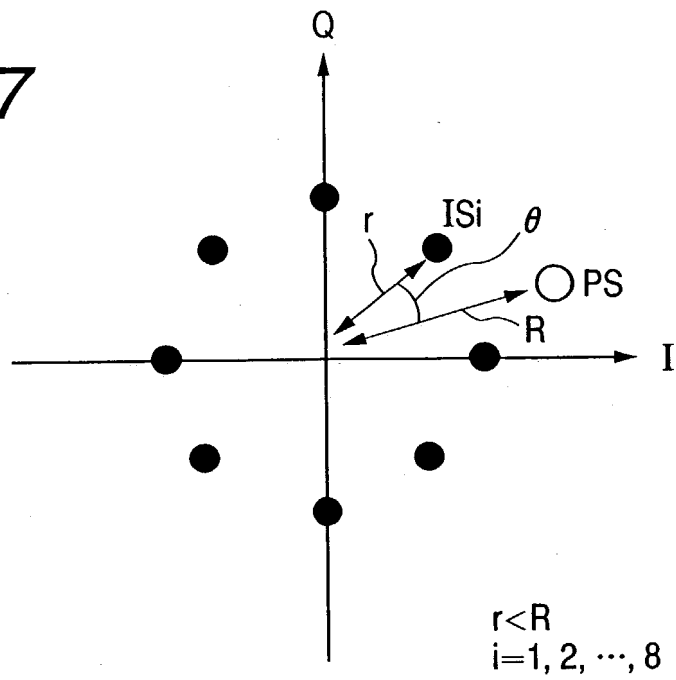


FIG. 7

8-PSK

**FIG. 8**

QPSK

